Dr. Wouter Lotens

D2S2 heading for deeper integration

ISSC 2004

S M P
soldier
modernisation
programme

Boston Dec 15 2004

Progress in integration

Effectiveness (depth)

Penetration (width)

Soldier system

small unit

force

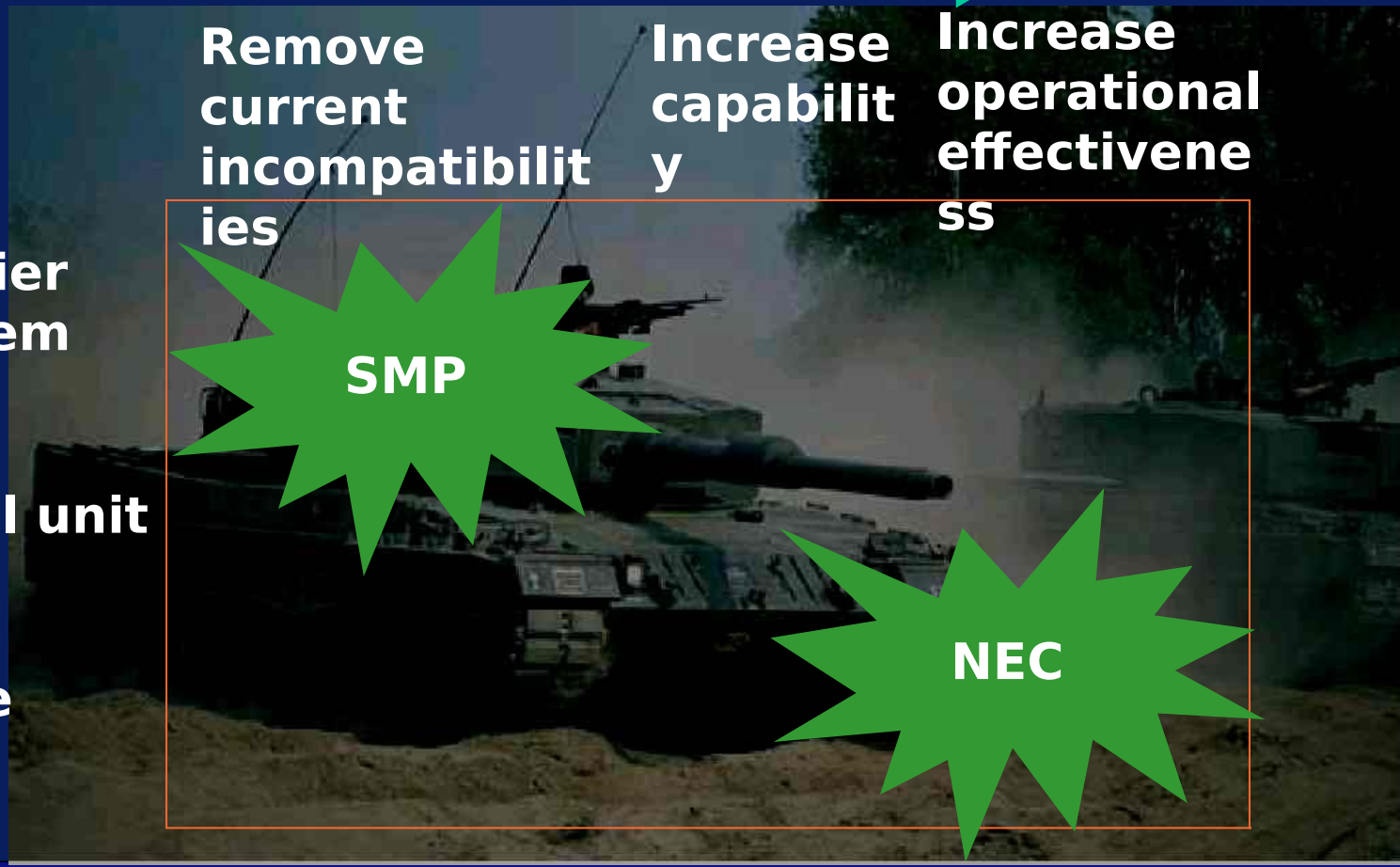
Remove current incompatibilities

Increase capability

Increase operational effectiveness

SMP

NEC



Example of growth in *depth*

Effectiveness (depth)

Penetration (width)

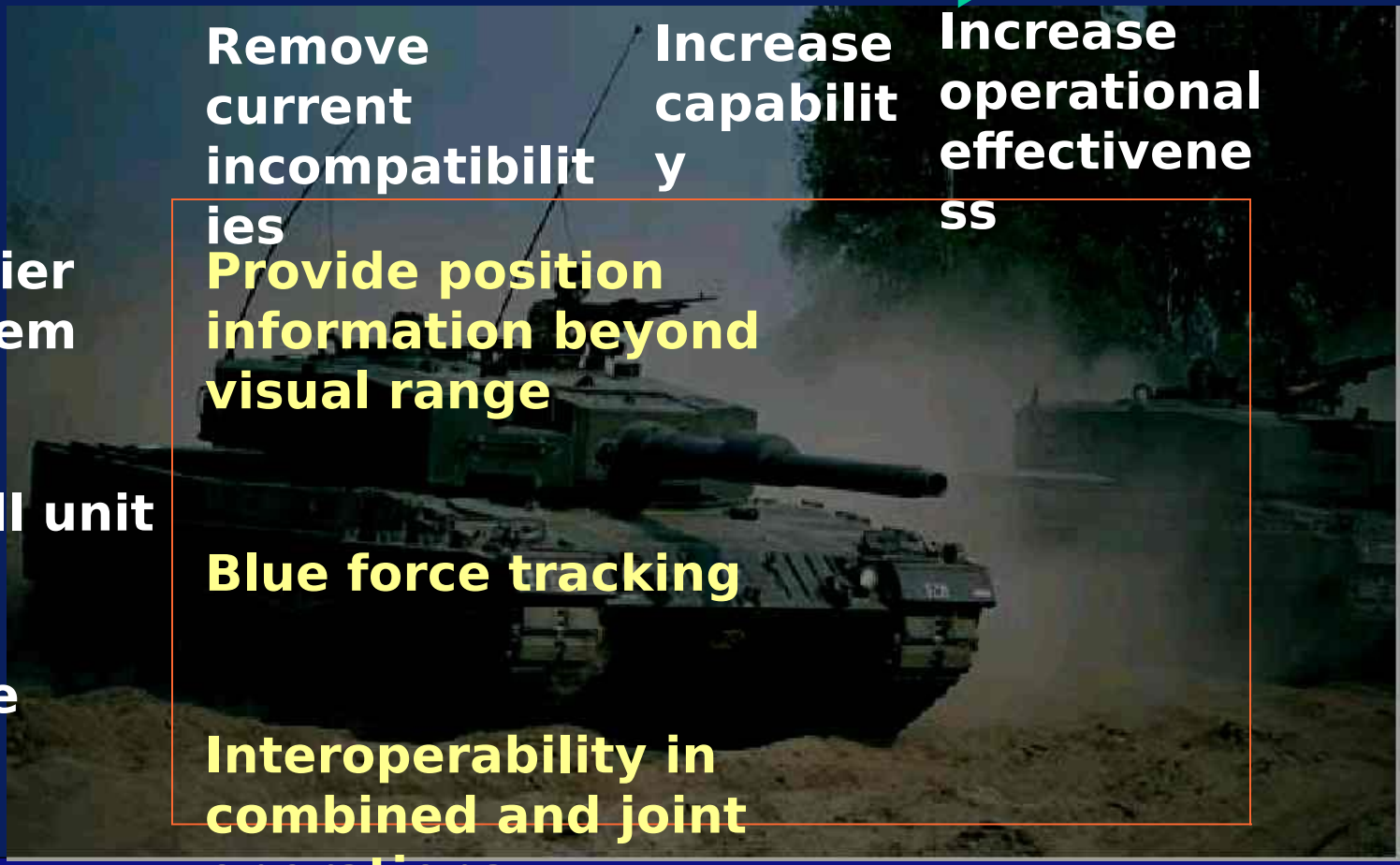
	Remove current incompatibilities	Increase capability	Increase operational effectiveness
Soldier system	Provide position information beyond visual range	Move in formation in complex terrain	Develop new tactics, avoid being a surface target
small unit			
force			

Example of growth in *width*

Effectiveness (depth)

Penetration (width)

	Remove current incompatibilities	Increase capability	Increase operational effectiveness
Soldier system	Provide position information beyond visual range		
small unit	Blue force tracking		
force	Interoperability in combined and joint operations		



D2S2 expansion

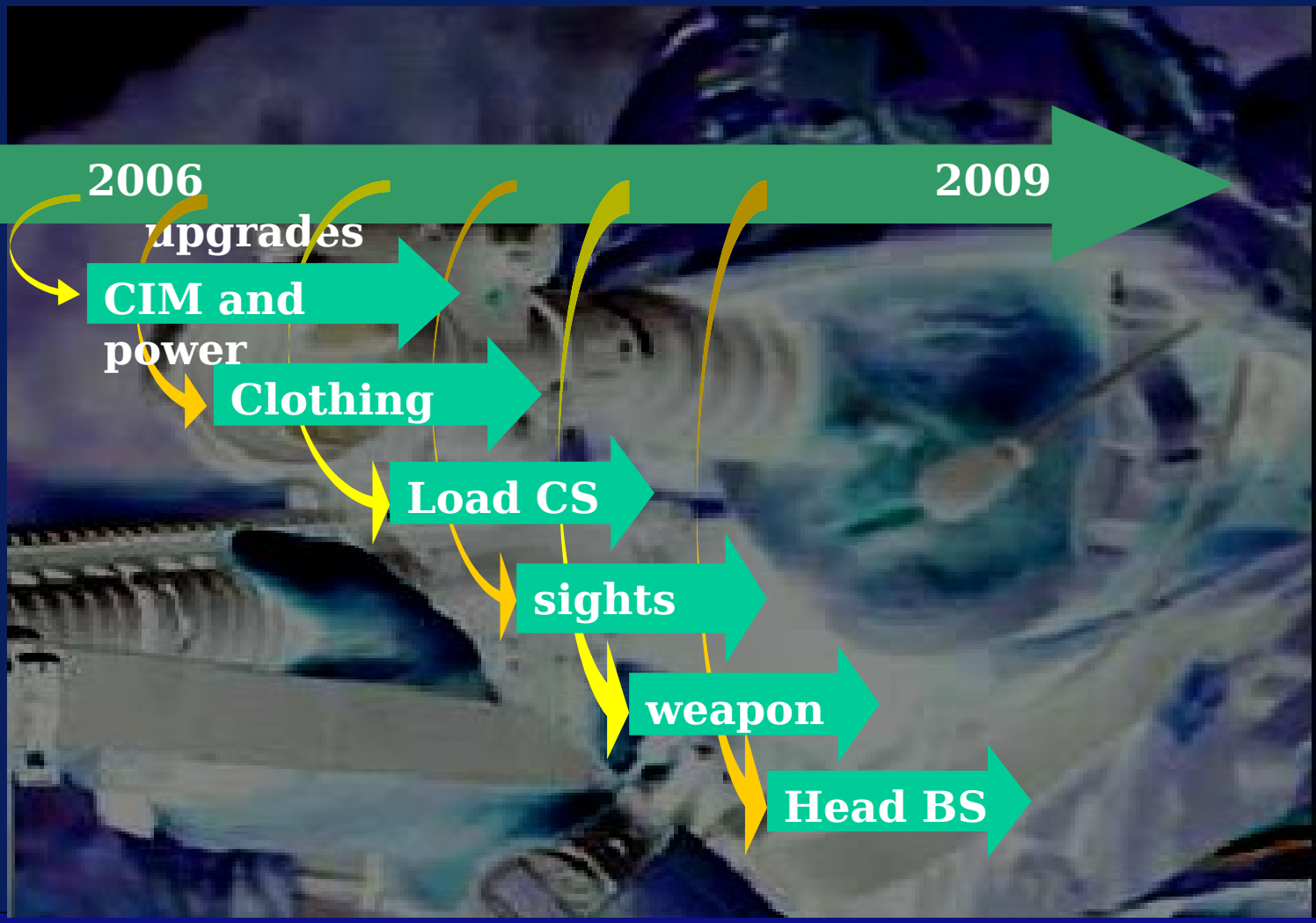
Effectiveness (depth)

Penetration (width)

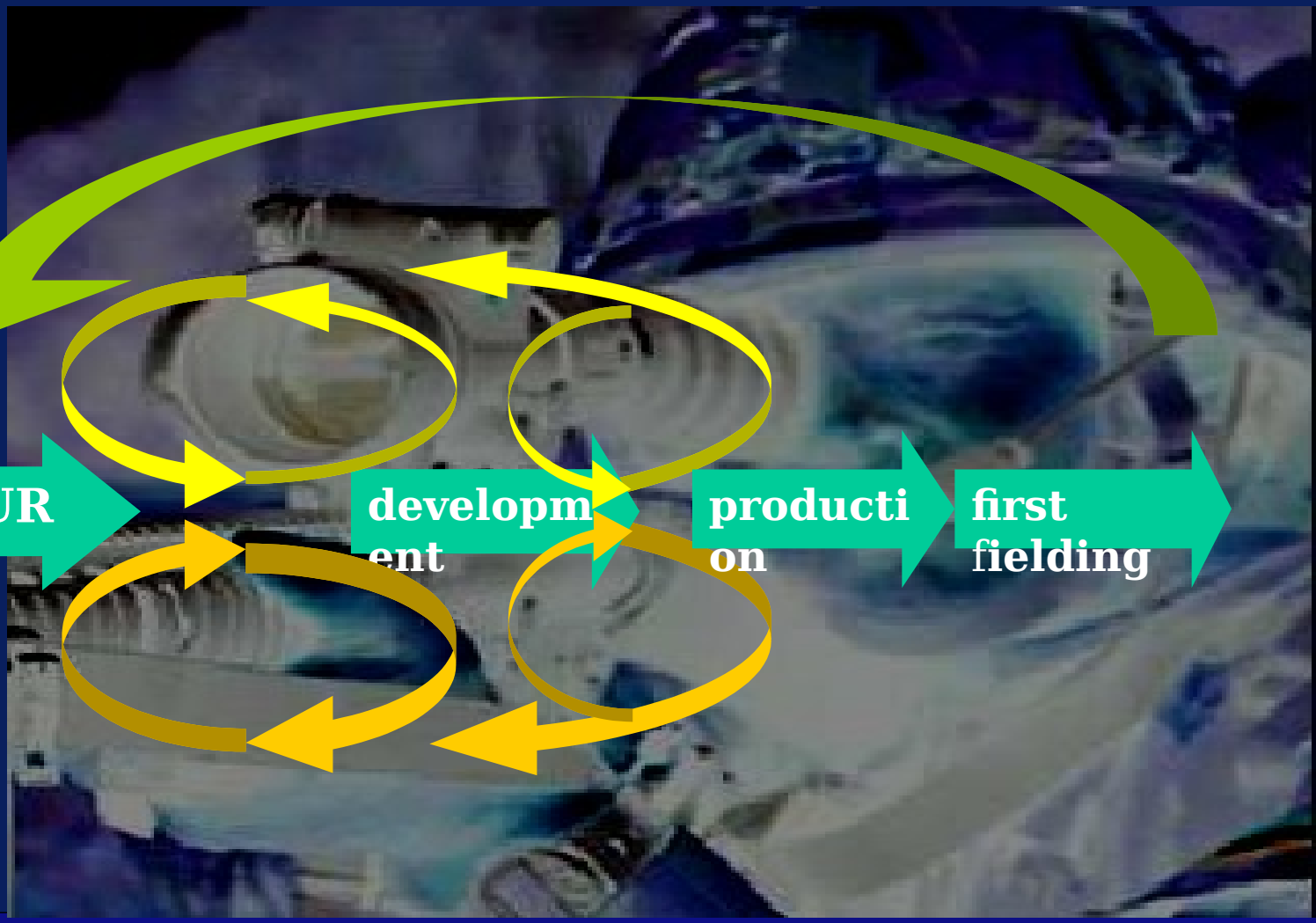
Maintaining integrity during modular fielding

DoD

Systems integrator



From requirements to rapid fielding the Communication and Information Module

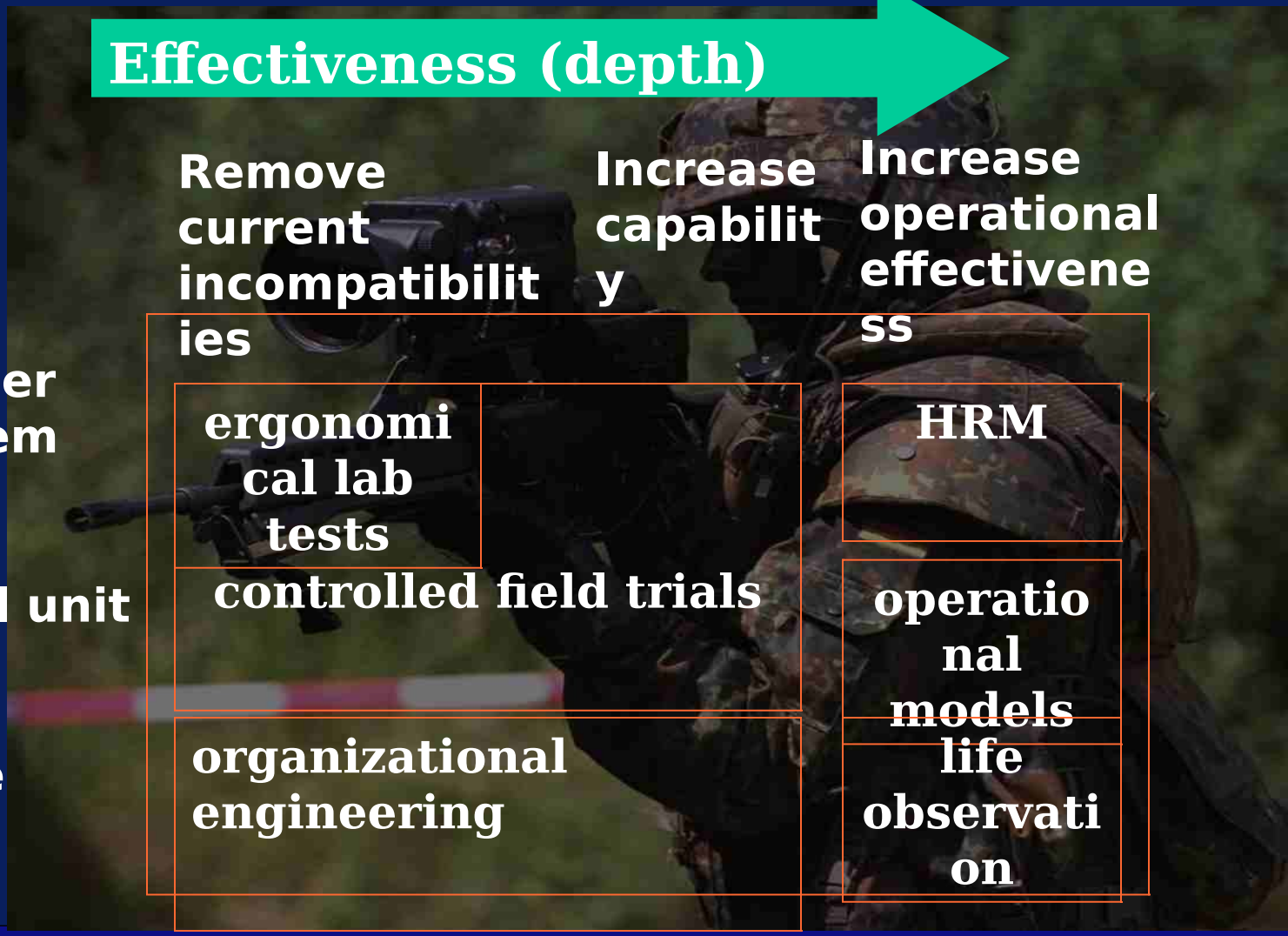


D2S2 2009 integration goals

Effectiveness (depth)

- protection vs mobility
- protection vs perception
- load vs mobility
  - operation in hot environments
  - versatile sights and vision
  - situation awareness
  - weapons variety and mix
    - improved tactics
    - goal based tasking
    - reduced signature

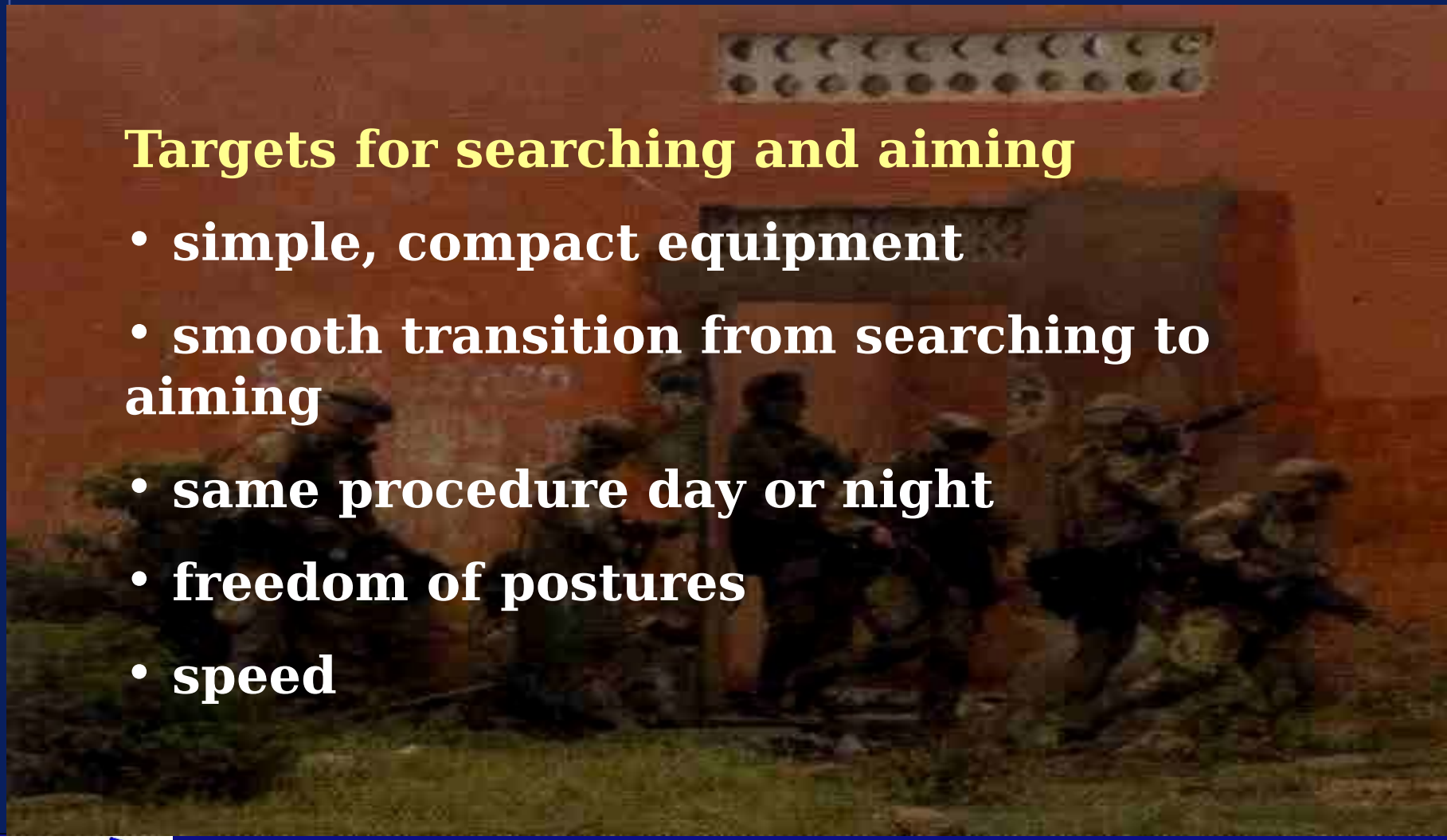
Verification



Example integration study

- protection vs mobility
- protection vs perception
- load vs mobility
  - operation in hot environments
  - **versatile sights and vision**
  - situation awareness
  - weapons variety and mix
    - improved tactics
    - goal based tasking
    - reduced signature

Searching and aiming

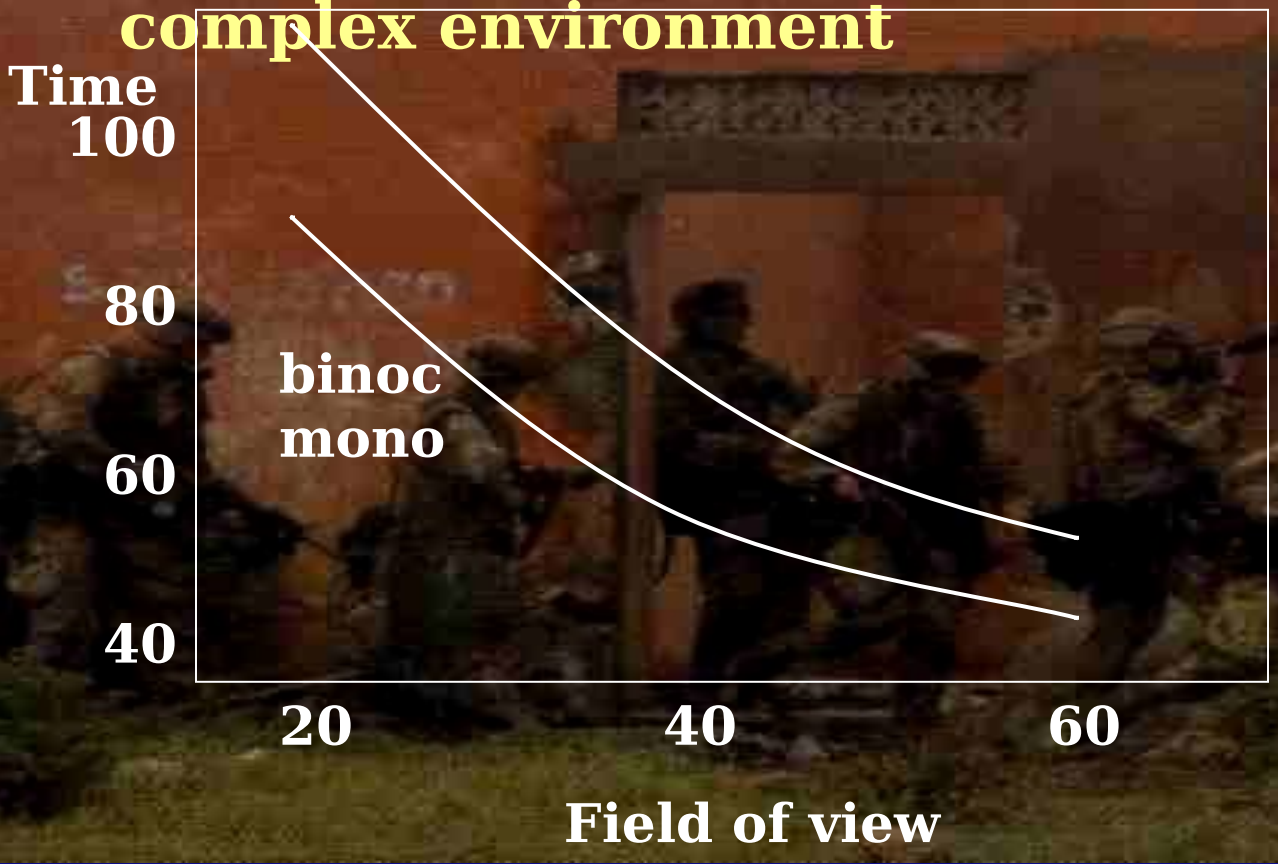


Targets for searching and aiming

- simple, compact equipment
- smooth transition from searching to aiming
- same procedure day or night
- freedom of postures
- speed

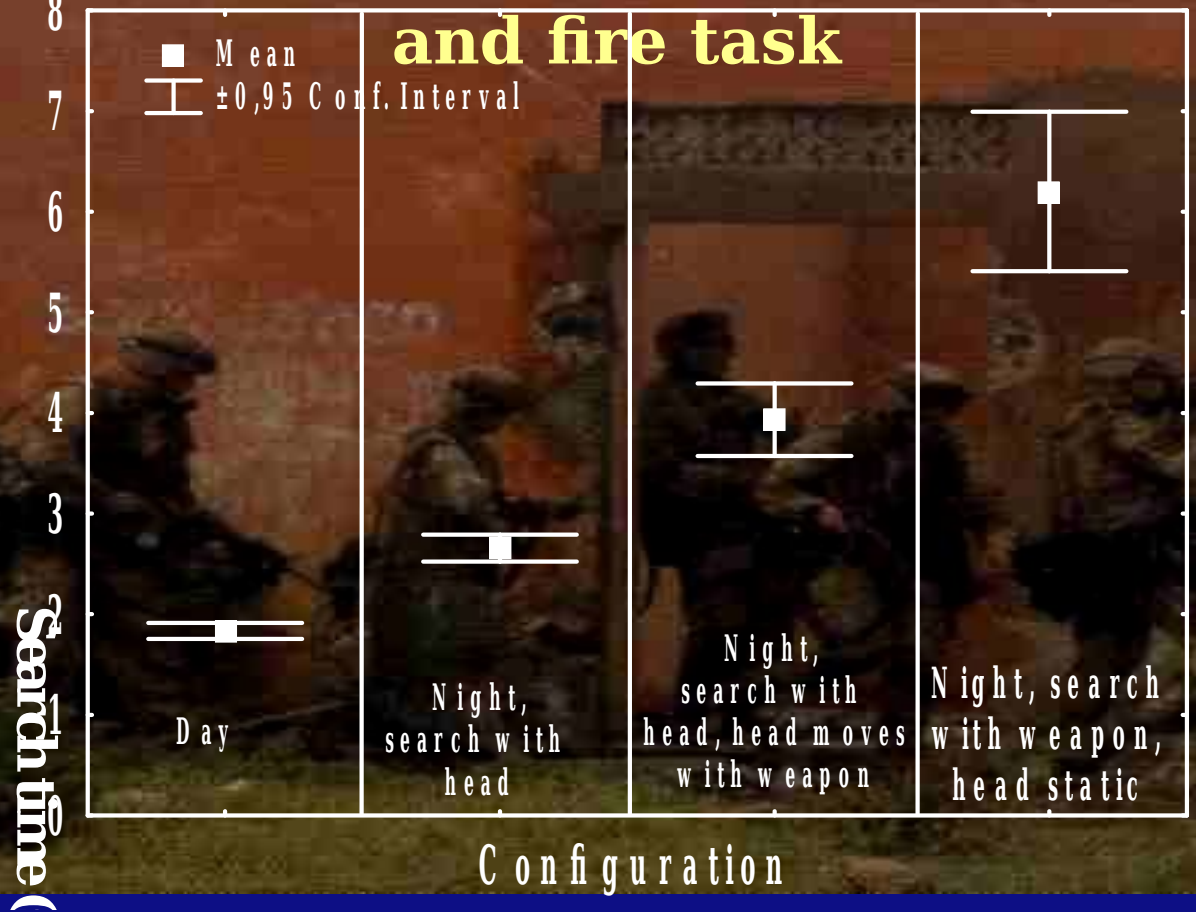
Searching and aiming

Effect of field of view and mono/binoc NVG on navigation in complex environment



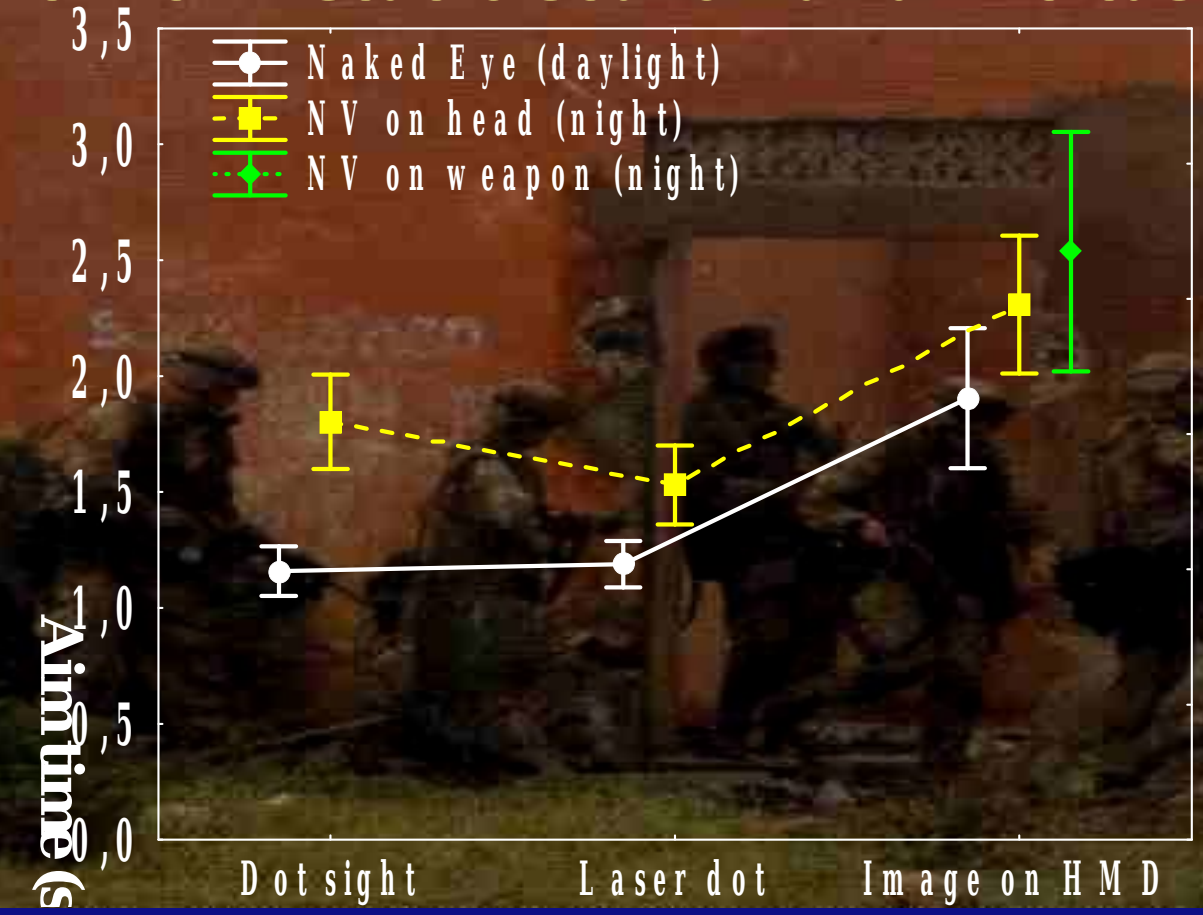
Searching and aiming

Effect of sensor position and display position on searchtime in static search and fire task

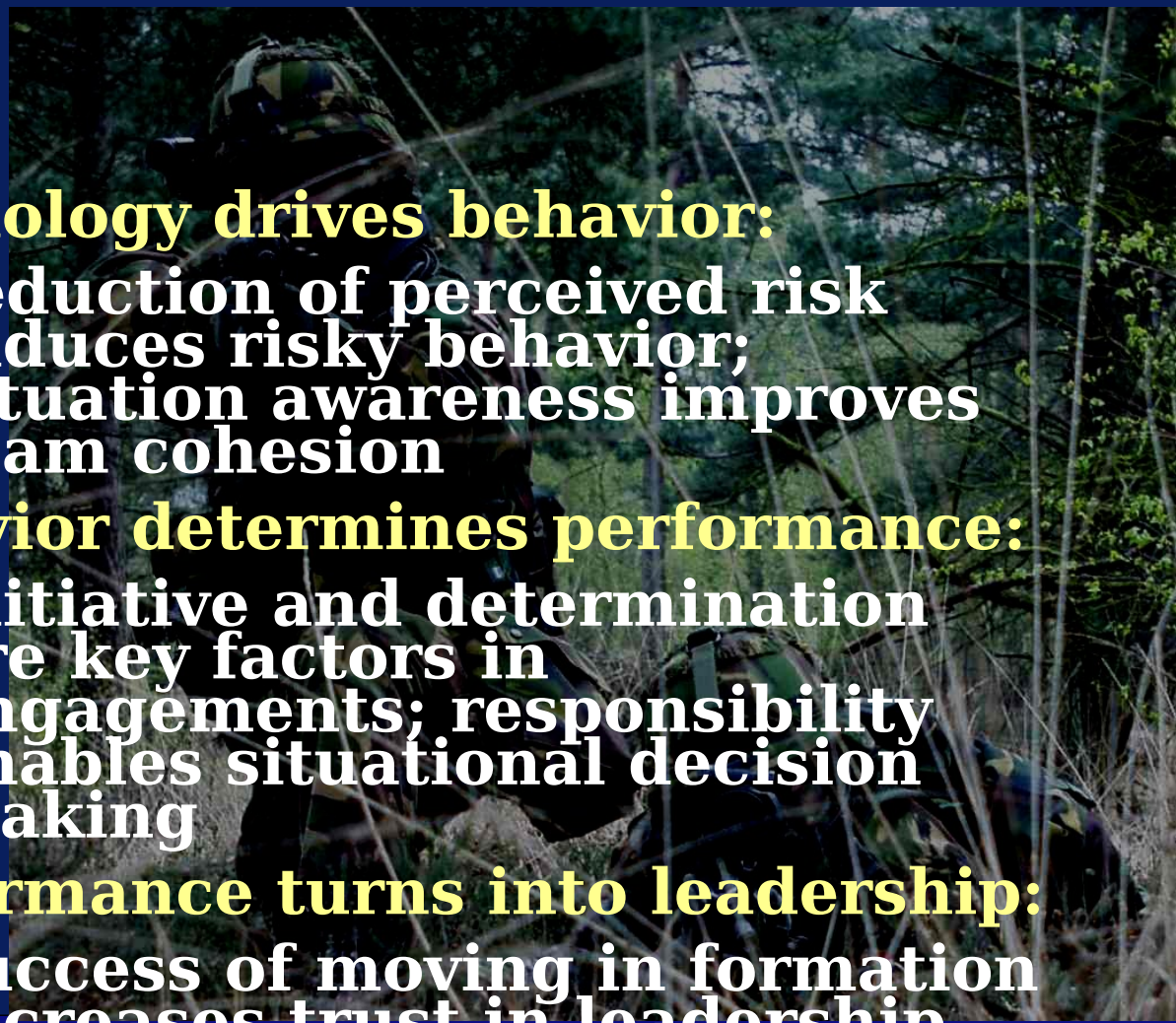


Searching and aiming

Effect of NVG and aim on aiming time in static search and fire task

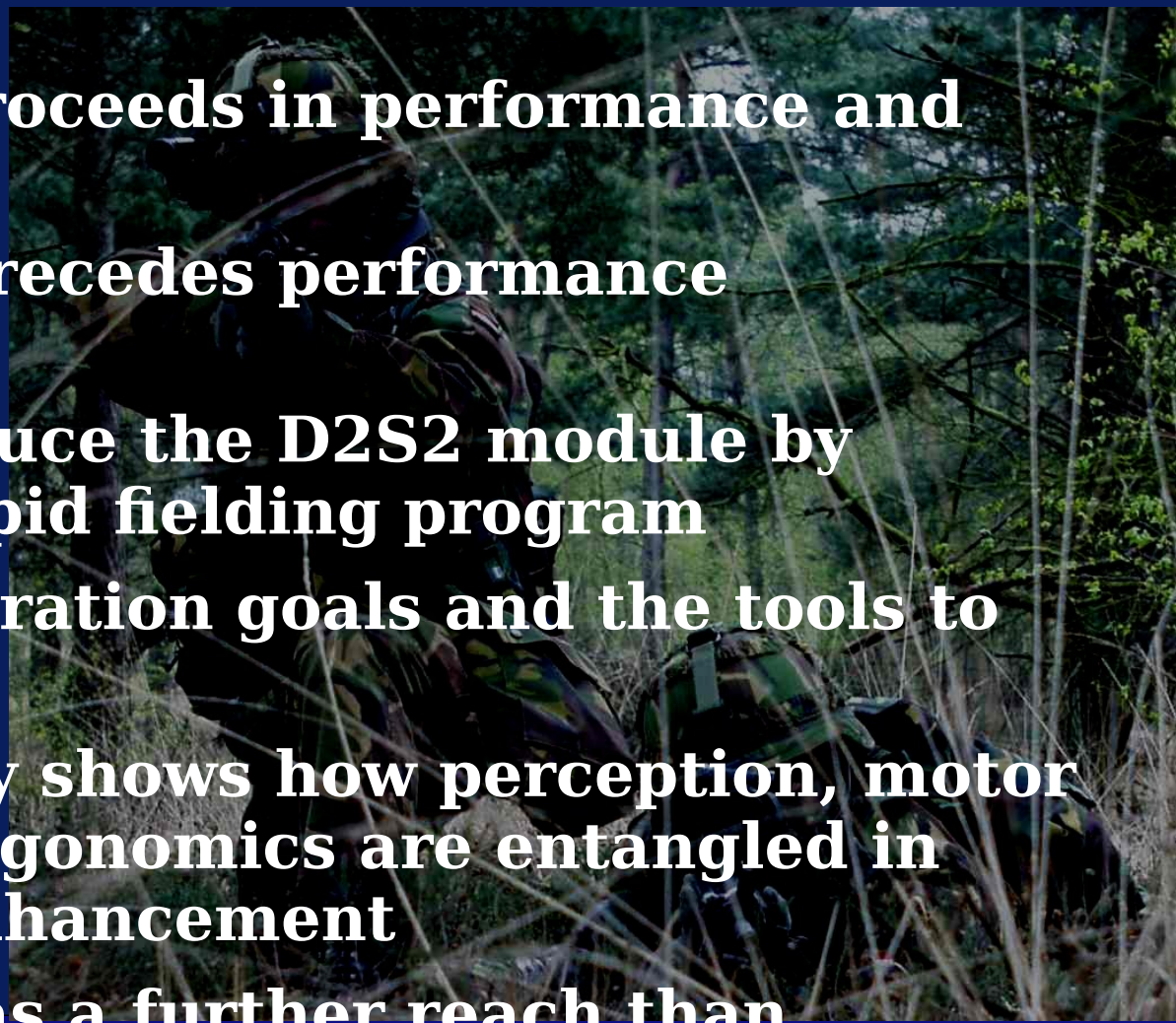


Technology and behavior



- **technology drives behavior:**
  - reduction of perceived risk induces risky behavior; situation awareness improves team cohesion
- **behavior determines performance:**
  - initiative and determination are key factors in engagements; responsibility enables situational decision making
- **performance turns into leadership:**
  - success of moving in formation increases trust in leadership

Conclusions



- Integration proceeds in performance and penetration
- Penetration precedes performance staggering
- NL will introduce the D2S2 module by module, in a rapid fielding program
- We have integration goals and the tools to verify them
- Example study shows how perception, motor behavior and ergonomics are entangled in performance enhancement
- Technology has a further reach than technical performance, it may enhance morale

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